REMARKS

This is a response to the Office Communication mailed February 1, 2007 (**Non-Final Action**). The three-month extended deadline is August 1, 2007. Applicants submit herewith a three-month Petition for Extension of Time and the appropriate fee. Accordingly, Applicants believe that the Reply is being timely filed. Applicants believe that the fees submitted herewith are sufficient. However, in the event that Applicants are incorrect in their assumption, please charge any necessary fee to Deposit Account No. 23-2415, referencing Docket No. 34569-704.201.

In order to expedite prosecution, Claim 2 has been cancelled, and the features thereof have been incorporated into Claim 1. Also in order to expedite prosecution, Claims 31-34 have been cancelled and Claims 1, 3-10, 12, 14-15, 18, 20, 22, and 27-30 have been amended. Claims 1, 3-15, 18, and 20-30 are currently pending. In view of the remarks and amendments submitted herein, Applicants believe that the Application is in condition for allowance and such action is earnestly solicited.

By the above amendments, the claims were amended to expedite allowance of the subject application. The amendments are fully supported by the specification as originally filed. As discussed below, Applicants believe that the amended claims are free of the rejections and objections set forth in the Office Action. Accordingly, Applicants believe that the application is now in condition for allowance and such favorable action is respectfully requested.

I. Priority

Applicants respectfully disagree with the statement in the Office Action that Applicants have not complied with one or more conditions for receiving the benefit of the prior-filed application under 35 U.S.C. 119(e). Applicants respectfully submit that prior application Serial No. 60/427,448 provides sufficient support to the invention, as presently claimed. For example, in the Provisional Application Serial No: 60/427,448, filed November 19, 2002, on page 3, second paragraph, lines 1-9, quantifying an average effect is represented in the specification in the text and functions: "For modeling the relationship between x_{ij} and $p_{i-1,j}$, we use the nonparametric additive regression model as follows:

$$x_{ij} - m_{j1}\left(p_{i-1,1}^{(j)}\right) + \cdots + m_{jq_j}\left(p_{i-1,q_j}^{(j)}\right) + \varepsilon_{ij},$$

where ε_{ij} depends independently and normally on mean 0 and variance σ_j^2. Here, $m_{jk}(\cdot)$ is a smooth function from R to R and can be expressed by using the linear combination of basis functions

$$m_{jk}\left(p_{i-1,k}^{(j)}\right) = \sum_{m=1}^{M_{jk}} \gamma_{mk}^{(j)} b_{mk}^{(j)}\left(p_{i-1,k}^{(j)}\right), \quad k = 1, \ldots, q_j,$$

where $\gamma_{1k}^{(j)}, \ldots, \gamma_{M_{jk}k}^{(j)}$ are unknown coefficient parameters and $\{b_{ik}^{(j)}(\cdot), \ldots, b_{M_{jk}k}^{(j)}(\cdot)\}$ is the prescribed set of basis functions" (Provisional Application Serial No: 60/427,448, on page 3, second paragraph, lines 1-9, *see also* Specification for the present application, 10/716,330, on page 11, paragraph 1, lines 1-9 [hereinafter the ["Specification"]). Furthermore, U.S. published application 2003-0219764 (U.S. Patent Application Serial No: 10/259,723) incorporated fully in the subject application by reference (see page 2, second paragraph, lines 3-4) describes $m_{jk}(\cdot)$ as the "main effects component" in paragraph [0112] of the specification of U.S. published application 2003-0219764.

As to Examiner's objection to the phrase "determining if one or more groups of genes is expressed differently," Applicants believe that amended Claim 1 is free of this objection.

II. Disclosure Objections

Contrary to the assertion in the Office Action, Applicants believe neither cy3 nor cy5 are trademarks. Cyanines, such as Cy3 (or cy3) and Cy5 (or cy5), are synthetic dyes used in various biological applications including in gene chips and in comparative genomic hybridization. Applicants respectfully disagree with the objection in the Office Action to use of cy3 and cy5 and earnestly request that the objection be withdrawn.

The Abstract has been corrected per Examiner's suggestion, please refer to the Amendment to the Abstract noted on page 2. Applicants earnestly request that the objection to the Abstract be withdrawn.

III. Claim Objections

The Examiner has objected to Claims 4, 7 and 28 for having certain informalities. By the above amendments, it is believed that Claims 4, 7 and 28 are free of these objections, and withdrawal thereof is respectfully requested.

IV. Claim Rejections – 35 U.S.C. § 101

A. Claim 1-15, 18 and 20-34 rejection under 35 U.S.C. § 101

Claims 1-15, 18 and 20-34 were rejected under 35 U.S.C. 101 because allegedly the claimed invention is directed to non-statutory subject matter (Office Action, page 5 et seq.).

The Office Action states that the "instant claims are drawn to computational means for constructing a gene network." Applicants respectfully traverse this rejection. Claims 1-15, 18, 20-30, and 31-34 (as amended) are method claims. No claims, original or currently amended, are drawn to "computational means for constructing a gene network," which appears to be written in means-plus-function claim language.

Nevertheless, without waiving Applicants' objections and traverse to the Examiner's ground for rejection, Applicants have amended Claim 1 in order to expedite prosecution of the subject application. The preamble of Claim 1 recites: "generating a graph representing the gene network of relationships between the genes." Claim 1 further recites the step of "generating a graph representing the gene network of relationships between said genes." Graphs representing of the gene network of relationships are found, for example, in Figure 2b, Figure 3c, and described on page 4, 2nd paragraph of the DETAILED DESCRIPTION, line 6, on page 7, 3rd paragraph, lines 6-7, on page 8, lines 2-4, on page 13, lines 13-14, and on page 17, 3rd paragraph line 6-8 of the Specification.

The Office Action additionally rejected Claims 31-34 under 35 U.S.C. 101 as being drawn to non-statutory subject matter (Office Action, page 7). In order to expedite prosecution, Applicants have cancelled Claims 31-34.

In view of Applicants' amendment, Applicants respectfully request withdrawal of the rejection of Claims 1-15, 18 and 20-30 under 35 U.S.C. §101 as allegedly being drawn to non-statutory subject matter.

V. Claim Rejections – 35 U.S.C. § 112

Claims 1-15, 18, and 20-34 were rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This rejection is respectfully traversed for at least the following reasons.

In order to expedite prosecution, Applicants have cancelled Claims 2, and 31-34. Thus, the rejection of those claims has been rendered moot. Moreover, Claims 1, 3-15, 18, and 20-30 have been amended. Applicants believe that Claims 1, 3-15, 18, and 20-30 are free from the rejections under 35 U.S.C. §112 as being indefinite. Applicants respectfully request withdrawal of the rejection of Claims 1-15, 18, and 20-34 under 35 U.S.C. §112.

The Office Action objects to the phrase "providing a Bayesian computational model" in Claim 2, as allegedly being unclear. In order to expedite prosecution, Applicants have amended Claim 1, and cancelled Claim 2. The features of Claim 2 have been incorporated into Claim 1. Furthermore, Applicants have amended Claims 3, 5-7, 9-11, and 13, previously dependent on Claim 2 to be dependant on Claim 1. Claim 1 is believed to be free of the rejections in the Office Action under 35 U.S.C. §112. Applicants respectfully request that Examiner withdraw the rejections of Claim 1 and the rejections of Claims 3, 5-7, 9-11, and 13 dependent directly or indirectly on Claim 2, now amended to be depended upon Claim 1, under 35 U.S.C. §112.

The Office Action objects to the phrase "using time course study to alter gene expression" in Claim 4, as allegedly being unclear. In order to expedite prosecution, Applicants have amended Claim 4. Contrary to the parsing of Claim 4 in the Office Action, it is not a "time course data" that "alter[s] gene expression." Rather, a "time course study" studies altering gene expression over time (*see* Specification, page 4, 6th paragraph, page 6, lines 12-14). Applicants believe amended Claim 4

to be free of the above objection. Applicants respectfully request withdrawal of the rejection of Claim 4 under 35 U.S.C. §112.

The Office Action objects to the phrase "implementing one or more of add, remove, and reverse," in Claim 12, as allegedly being unclear. Without waiving Applicants' objection to the Examiner's ground for rejection, Applicants have amended Claim 12 in order to expedite prosecution. The Specification provides embodiments of the method, for example, in Example 3 on page 16, steps 2-1 through 2-4 wherein parent genes are added or removed in the learning process. Furthermore, U.S. published application 2003-0219764 (U.S. Patent Application Serial No: 10/259,723) incorporated fully by reference (see Specification, page 2, second paragraph, lines 3-4) describes learning process steps as including adding a parent gene, removing a parent gene, or reversing the parent gene. In U.S. Patent Application Serial No: 10/259,723, $BNRC_{hetero}$ criterion is minimized. Amended Claim 12 is believed to be free of the above objection. Applicants respectfully request withdrawal of the rejection of Claim 12 under 35 U.S.C. §112.

With respect to Claim 20, the Office Action states "Claim 20 recites a method for constructing a gene network but fails to provide active steps that achieve this goal." In order to expedite prosecution and without waiving Applicants' objection to the Examiner's ground for rejection, Applicants have amended Claim 20 in an effort to expedite prosecution of the subject application. In view of Applicant's amendment, Applicants respectfully request withdrawal of the rejections of Claim 20, and of Claims 21-26, 28, 31, 32 and 34 which depend directly or indirectly on Claim 20 under 35 U.S.C. §112 second paragraph.

The Office Action objects to the phrase "implementing one or more of add, remove, and reverse," in Claim 27, as allegedly being unclear. In order to expedite prosecution, Applicants have amended Claim 27. The Specification provides embodiments of the method, for example, in Example 3 on page 16, steps 2-1 through 2-4 wherein parent genes are added or removed in the learning process. Furthermore, U.S. published application 2003-0219764 (U.S. Patent Application Serial No: 10/259,723) incorporated fully in by reference (*see* Specification, page 2, second paragraph, lines 3-4) describes learning process steps as including adding a parent gene, removing a parent gene, or reversing the parent gene. In U.S. Patent Application Serial No: 10/259,723, $BNRC_{hetero}$ criterion is minimized. Amended Claim 27 is believed to be free of the above objection. Applicants respectfully request withdrawal of the rejection of Claim 27 under 35 U.S.C. §112.

In light of the amendments and remarks made herein, Applicants believe that Claims 1-15, 18, and 20-34 are free of the rejections in the Office Action under 35 U.S.C. §112 second paragraph. Applicants respectfully request withdrawal of the rejections of Claims 1-15, 18, and 20-34 under 35 U.S.C. 112.

VI. Claim Rejections – 35 U.S.C. § 102

Claims 20, 21-23, and 25 under 102(a) or 102(b) were rejected as allegedly being anticipated over Imoto et al. (Pacific Symposium on Biocomputing) [hereinafter "Imoto, *Pacific*"]. Claims 1, 4, 8, and 18 were rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Friedman et al. (Journal of Computational Biology, Vol. 7, pages 601-620, 2000) [hereinafter "Friedman et al."]. Claims 1-15, 18 and 20-34 under 35 U.S.C. 102(e) were rejected as allegedly being anticipated by Imoto et al. (U.S. Patent Publication No. 2003/0219764) filed September 26, 2002 [hereinafter "Imoto, *Disruption Libraries*"]. These rejections are traversed for at least the following reasons. All of the rejections raise similar issues and, thus, are addressed as a group.

A reference is only good for what it clearly and definitely discloses. As noted by the Federal Circuit, anticipation under 35 U.S.C. § 102 occurs only "when the same device or method, having all of the elements contained in the claim limitations, is described in a single prior art reference." *Crown Operations International, Ltd. v. Solutia, Inc.*, 289 F.3d 1367 (Fed. Cir. 2002). "A single prior art reference anticipates a patent claim if it expressly or inherently describes each and every limitation set forth in the patent claim." *Trintec Industries, Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292 (Fed. Cir. 2002). Moreover, the "single reference must describe the claimed invention with sufficient precision and detail to establish that the subject matter existed in the prior art." *Verve, LLC v. Crane Cams, Inc.*, 311 F.3d 1116 (Fed. Cir. 2002). *See also In re Spada*, 911 F.2d. 705, 708 (Fed. Cir. 1990) (stating that "the reference must describe the applicant's claimed invention sufficiently to have placed a person of ordinary skill in the field of the invention in possession of it."); *PPG Indus., Inc. v. Guardian Indus., Corp.*, 75 F.3d 1558 (Fed. Cir. 1996) ("To anticipate a claim, a reference must disclose every element of the challenged claim and enable one skilled in the art to make the anticipating subject matter.").

Claim 20 (as amended) is directed to: "[a] method for constructing a gene network model of a system containing a network of genes from time course gene expression data, said method comprising: applying a Bayesian computational model to the time course gene expression data, wherein applying said Bayesian computational model comprises minimizing a $BNRC_{dynamic}$ criterion; and generating a graph representing the gene network model resulting from applying the Bayesian computational model to the time course gene expression data wherein $BNRC_{dynamic}$ criterion is minimized."

Imoto, *Pacific* does not suggest much less disclose each feature of the presently claimed invention. For example, Imoto, *Pacific* does not disclose "applying a Bayesian computational model to the time course gene expression data, wherein applying said Bayesian computational model comprises minimizing a $BNRC_{dynamic}$ criterion." In fact, nowhere in Imoto, *Pacific* does the word "time" appear, and nowhere in Imoto, *Pacific* does the word "dynamic" appear. For the foregoing reasons, Applicants submit that Claim 20 is not anticipated under 35 U.S.C. 102(a,b) by Imoto, *Pacific*. Therefore Applicants request that the Examiner withdraw his rejection of Claim 20. Furthermore, Claims 21-23, and 25 depend directly or indirectly from Claim 20, and include the features thereof. For the reasons provided with respect to Claim 20, Claims 21-23, and 25 are not anticipated by Imoto, *Pacific* under 35 U.S.C. 102(a,b). Therefore, Applicants also request that the rejection of Claims 20, 21-23, and 25 under 35 U.S.C. 102(a,b) be withdrawn as well.

As to the rejection of Claim 1, 4, 8, and 18 under 35 U.S.C. 102(b) as allegedly being anticipated by Friedman et al., Claim 1 (as amended), is directed to: "[a] method for constructing a gene network of relationships between a plurality of genes of a set of genes and generating a graph representing the gene network of relationships between the genes comprising the steps of: (a) providing a quantitative time course data library for the set of genes of an organism, said library including expression results based on time course of expression of each gene in said set of genes, wherein the expression results comprise gene expression data at a plurality of time points for each gene in said set of genes, quantifying an average effect on expression of each gene at each time point by each other of said genes at each time point, and quantifying a measure of variability of the effect on expression of each gene at each time point on each other of said genes; (b) creating a gene expression matrix from said library, wherein the gene expression matrix comprises matrix data

comprising the effects on expression of each gene at each time point by each other of said genes at each time point; (c) applying a Bayesian computational model to the matrix data, wherein said Bayesian model comprises minimizing a $BNRC_{dynamic}$ criterion; and (d) generating the gene network of relationships between said genes and generating a graph representing the gene network of relationships between said genes."

Friedman et al. does not suggest much less disclose each feature of the presently claimed invention as set forth in Claim 1. For example, Friedman et al. does not disclose the step in Claim 1 of "applying a Bayesian computational model to the matrix data, wherein said Bayesian model comprises minimizing a $BNRC_{dynamic}$ criterion." In fact, Friedman et al. states: "we treat each measurement as an independent sample from a distribution and do not take into account the temporal aspect of the measurement." (Friedman et al. page 610 7th paragraph, lines 1-2). Friedman et al. purportedly compensates for the temporal nature of cell cycle process by adding a variable denoting the cell cycle phase (Friedman et al. page 610 7th paragraph, lines 3-4). Friedman et al. expresses a problem, that temporal models accounting for the temporal aspect of the measurements "raise[] the number of variables in the model." The authors state that they "are currently perusing this issue" (Friedman et al. page 610, footnote 3) without teaching, disclosing or suggesting a solution including "applying a Bayesian computational model to the matrix data, wherein said Bayesian model comprises minimizing a $BNRC_{dynamic}$ criterion."

For the foregoing reasons, Applicants' Claim 1 is not anticipated by Friedman et al. under 35 U.S.C. 102(b). Therefore, Applicants respectfully request that the rejection of Claim 1 be withdrawn. Furthermore, Claims 4, 8, and 18 depend directly or indirectly from Claim 1, and include the features thereof. For the reasons provided with respect to Claim 1, Claims 4, 8, and 18 are not anticipated by Friedman et al. under 35 U.S.C. 102(b). Therefore, Applicants also respectfully request that the rejection of Claims 4, 8, and 18 under 35 U.S.C. 102(b) be withdrawn.

Claims 1-15, 18 and 20-34 were rejected under 35 U.S.C. 102(e) as allegedly being anticipated by Imoto, *Disruption Libraries*. Without prejudicing or disclaiming Applicants' rights to provide a showing under 37 CFR 1.132 or to provide a showing under 37 CFR 1.131 to overcome this rejection, Applicants respectfully traverse the rejection of Claims 1-15, 18 and 20-34 under 35 U.S.C. § 102(e) over Imoto, *Disruption Libraries*.

Imoto, *Disruption Libraries* does not suggest, much less disclose each feature of the presently claimed invention. For example, Imoto, *Disruption Libraries* does not disclose the step in Claim 1 of "applying a Bayesian computational model to the matrix data, wherein said Bayesian model comprises minimizing a $BNRC_{dynamic}$ criterion." Thus, Applicants believe Claim 1 is not anticipated under 35 U.S.C. 102(e) by Imoto, *Disruption Libraries*. Therefore, Applicants respectfully request withdrawal of the rejection of Claim 1 under 35 U.S.C. 102(e) as allegedly being anticipated by Imoto, *Disruption Libraries*. Further, Claim 2 has been canceled, and its features incorporated into Claim 1, upon which Claim 2 originally depended. Claims 3-15, and 18 as currently amended depend directly or indirectly from Claim 1, and include the features and steps thereof. For the reasons provided with respect to Claim 1, Claims 3-15, and 18 are not anticipated by Imoto, *Disruption Libraries* under 35 U.S.C. 102(e). Therefore, Applicants also respectfully request that the rejection of Claims 3-15, and 18 under 35 U.S.C. 102(e) be withdrawn as well.

Imoto, *Disruption Libraries* fails to suggest much less disclose each feature of the presently claimed invention claimed in Claims 20-30 (Claims 31-34 currently cancelled). For example, Imoto, *Disruption Libraries* does not disclose the step in Claim 20 of "applying a Bayesian computational model to the time course gene expression data, wherein applying said Bayesian computational model comprises minimizing a $BNRC_{dynamic}$ criterion." Thus, Applicants believe Claim 20 is not anticipated under 35 U.S.C. 102(e) by Imoto, *Disruption Libraries*. Therefore, Applicants respectfully request the withdrawal of the rejection of Claim 20 as being anticipated by Imoto, *Disruption Libraries* under 35 U.S.C. 102(e). Claims 21-30 depend directly or indirectly from Claim 20, and include the features thereof. For the reasons provided with respect to Claim 20, Claims 21-30 are not anticipated by Imoto, *Disruption Libraries* under 35 U.S.C. 102(e). Therefore, Applicants also respectfully request that the rejections of Claims 21-30 under 35 U.S.C. 102(e) be withdrawn as well.

Claims 31-34 have been cancelled in order to expedite prosecution and, thus, the rejections of Claims 31-34 as being anticipated by Imoto, *Disruption Libraries* under 35 U.S.C. 102(e) are rendered moot.

In light of the above, Applicants respectfully request withdrawal of the rejections of Claims 20, 21-23, and 25 under 102(a) or 102(b) as allegedly being anticipated over Imoto, *Pacific*, of Claims 1, 4, 8, and 18 under 35 U.S.C. 102(b) as allegedly being anticipated by Friedman et al., and

of Claims 1-15, 18 and 20-34 were under 35 U.S.C. 102(e) as allegedly being anticipated by Imoto, *Disruption Libraries.*

VII. Claim Rejections – 35 U.S.C. §103

A. Claims 2-3, 5-6, and 9-10 have been rejected under 35 U.S.C. § 103(a) over Friedman et al. (Journal of Computational Biology) as applied to claims 1, 4, 8, and 18 above, and further in view of Imoto et al. (Pacific Symposium on Biocomputing)

Claims 2-3, 5-6, and 9-10 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Friedman et al. as applied to Claims 1, 4, 8, and 18, and further in view of Imoto, *Pacific*. This rejection is traversed for at least the following reasons.

The Office Action asserts that "[t]he claims are drawn to the method of claim 1 with the additional limitations stemming from the use of a BNRC criterion." The Office Action further asserts that "Friedman et al. disclose the method of claim 1 . . . but do not disclose these additional limitations in combination with a BNRC criterion," and that Imoto, *Pacific* "disclose these additional limitations" (Office Action, pages 17-18, section 11).

Neither Friedman et al. alone, nor Friedman et al. and Imoto, *Pacific* in combination provide any teaching, suggestion, or description of a method as provided in Claim 1 that comprises the step of "applying a Bayesian computational model to the matrix data, wherein said Bayesian model comprises minimizing a $BNRC_{dynamic}$ criterion." In fact, nowhere in Imoto, *Pacific* does the word "time" appear, and nowhere in Imoto, *Pacific* does the word "dynamic" appear. Moreover, Friedman et al. states: "we treat each measurement as an independent sample from a distribution and do not take into account the temporal aspect of the measurement." (Friedman et al. page 610 7th paragraph, lines 1-2). Friedman et al. purportedly compensates for the temporal nature of cell cycle process by adding a variable denoting the cell cycle phase (Friedman et al. page 610 7th paragraph, lines 3-4). Friedman et al. expresses a problem, that temporal models accounting for the temporal aspect of the measurements "raise[] the number of variables in the model." The authors state that they "are currently perusing this issue" (Friedman et al. page 610, footnote 3) without teaching,

disclosing or suggesting a solution including "applying a Bayesian computational model to the matrix data, wherein said Bayesian model comprises minimizing a $BNRC_{dynamic}$ criterion."

Thus, neither Imoto, *Pacific*, nor Friedman et al. disclose, much less suggest, a method comprising "applying a Bayesian computational model to the matrix data, wherein said Bayesian model comprises minimizing a $BNRC_{dynamic}$ criterion" as required by Applicants' Claim 1. Since Imoto, *Pacific* and Friedman et al. individually (see above) or in combination fail to render Applicant's Claim 1 obvious, Claims 3, 5-6, and 9-10 depending directly or indirectly from Claim 1 also are not rendered obvious by Imoto, *Pacific* and Friedman et al. under 35 U.S.C. 103(a). Claim 2 has been canceled, and its features incorporated into Claim 1, upon which Claim 2 originally depended. Claims 3, 5-6, and 9-10 are believed to be, therefore, allowable and not rendered obvious by Imoto, *Pacific* and Friedman et al. under 35 U.S.C. 103(a). Applicants respectfully request withdrawal of the rejection of Claims 2-3, 5-6, and 9-10 under 35 U.S.C. 103(a) as allegedly being unpatentable over Friedman et al. as applied to Claims 1, 4, 8, and 18, and further in view of Imoto, *Pacific*.

B. Claims 2-3, 7, 10-13, 20-21, and 24-28 have been rejected under 35 U.S.C. § 103(a) over Friedman et al. (Journal of Computational Biology) as applied to claims 1, 4, 8, and 18 above, and further in view of Imoto et al. (Proceedings of the IEEE Computer Society Bioinformatics Conference)

Claims 2-3, 7, 10-13, 20-21, and 24-28 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Friedman et al. as applied to claims 1, 4, 8, and 18, and further in view of Imoto et al. (Proceedings of the IEEE Computer Society Bioinformatics Conference, pages 219-227, 2002) [hereinafter "Imoto, *IEEE*"]. This rejection is respectfully traversed for at least the following reasons.

Claim 2 has been canceled, and its features incorporated into Claim 1. With respect to Claim 1 (as amended) and those claims dependent, directly or indirectly, from Claim 1 (Claims 3, 7, and 10-13), Applicants believe neither Friedman et al. alone, nor Friedman et al. and Imoto, *IEEE* in combination provide any teaching, suggestion, or description of a method as provided in Claim 1

that comprises the step of "applying a Bayesian computational model to the matrix data, wherein said Bayesian model comprises minimizing a $BNRC_{dynamic}$ criterion."

For example, as indicated above, Friedman states: "we treat each measurement as an independent sample from a distribution and do not take into account the temporal aspect of the measurement." (Friedman et al. page 610 7th paragraph, lines 1-2). Friedman et al. purportedly compensates for the temporal nature of cell cycle process by adding a variable denoting the cell cycle phase (Friedman et al. page 610 7th paragraph, lines 3-4). Friedman et al. express a problem, that temporal models accounting for the temporal aspect of the measurements "raise[] the number of variables in the model." and clearly state that they "are currently perusing this issue" (Friedman et al. page 610, footnote 3) without teaching, disclosing or suggesting a solution including "applying a Bayesian computational model to the matrix data, wherein said Bayesian model comprises minimizing a $BNRC_{dynamic}$ criterion."

This deficiency is not cured by Imoto, IEEE. In this regard, Applicants respectfully request that Examiner pinpoint where in Imoto, *IEEE*, the step in Claim 1 of "applying a Bayesian computational model to the matrix data, wherein said Bayesian model comprises minimizing a $BNRC_{dynamic}$ criterion" appears. Reviewing the text of Imoto, *IEEE*, neither does Imoto, *IEEE* disclose or suggest the step in Claim 1 of "applying a Bayesian computational model to the matrix data, wherein said Bayesian model comprises minimizing a $BNRC_{dynamic}$ criterion." In fact, nowhere in the text Imoto, *IEEE* does the word "dynamic" appear, and nowhere does the term "$BRNC_{dynamic}$" appear.

Thus, since neither Imoto *IEEE* nor Friedman et al. have anything to do with a method comprising "applying a Bayesian computational model to the matrix data, wherein said Bayesian model comprises minimizing a $BNRC_{dynamic}$ criterion," as required by Applicants' Claim 1, Applicants respectfully request withdrawal of the rejection of Claims 2-3, 7, 10-13, under 35 U.S.C. 103(a) as allegedly being unpatentable over Friedman et al. as applied to claims 1, 4, 8, and 18, and further in view of Imoto, *IEEE*. Imoto, *IEEE* and Friedman et al. individually (see above) or in combination fail to render Applicant's Claim 1 obvious and, thus, Claims 3, 7, and 10-13 depending directly or indirectly from Claim 1 also are not rendered obvious by Friedman et al. in view of Imoto, *IEEE* under 35 U.S.C. 103(a). Applicants respectfully request that the rejection of Claims 2-

3, 7, and 10-13 under 35 U.S.C. 103(a) as allegedly being unpatentable over Friedman et al. as applied to claims 1, 4, 8, and 18, and further in view of Imoto, *IEEE* be withdrawn.

With respect to Claim 20 and those claims dependent, directly or indirectly, from Claim 20, (Claims 21, and 24-28) neither Friedman et al. alone, nor Friedman et al. and Imoto, *IEEE* in combination provide any teaching, suggestion, or description of a method as provided in Claim 20 that comprises the step of "applying a Bayesian computational model to the time course gene expression data, wherein applying said Bayesian computational model comprises minimizing a $BNRC_{dynamic}$ criterion."

Thus, since Imoto *IEEE*, and Friedman et al. fail to disclose or suggest a method comprising "applying a Bayesian computational model to the time course gene expression data, wherein applying said Bayesian computational model comprises minimizing a $BNRC_{dynamic}$ criterion," as required by Applicants' Claim 20, Applicants respectfully request that the rejection be withdrawn.

In light of the above, Applicants respectfully request withdrawal of the rejections of Claims 2-3, 7, and 10-13 under 35 U.S.C. 103(a) as allegedly being unpatentable over Friedman et al. in view of Imoto, *IEEE*, and of Claims 20-21, and 24-28 under 35 U.S.C. 103(a) as allegedly being unpatentable over Friedman et al. as applied to claims 1, 4, 8, and 18, and further in view of Imoto et al.

VIII. CONCLUSION

In view of the remarks and amendments submitted herein, Applicants believe that the Application is in condition for allowance and such favorable action is earnestly solicited.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (858) 350-2337.

Respectfully submitted,

WILSON SONSINI GOODRICH & ROSATI
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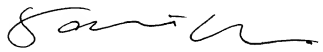

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